

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1-21. (cancelled).

22. (currently amended) ~~[[The]]~~ An apparatus of claim 1 for continuous casting of molten metals, the molten metal being continuously cast using a casting mold, said apparatus comprising:

electromagnets each comprising an iron core and a coil wound over said iron core,

said electromagnets being arranged in a facing relation on opposite sides of said mold along a transverse width thereof to lie side by side along a longitudinal width of said mold; and

a single-phase AC current power supply connected to each coil and structurally configured to supply a single-phase AC current to each coil such that every pair of the electromagnets lying side by side next to each other have a phase difference of 0° or 180°, wherein,

said electromagnets arranged in a facing relation on opposite sides of said mold along a transverse width thereof to lie side by side along a longitudinal width of said mold comprise
i) at least a first electromagnet on a first of said sides, a

second electromagnet immediately adjacent the first electromagnet, and a third electromagnet immediately adjacent the second electromagnet, and ii) at least a fourth electromagnet on a second of said sides, a fifth electromagnet immediately adjacent the fourth electromagnet, and a sixth electromagnet immediately adjacent the fifth electromagnet,

the first electromagnet is opposite the fourth electromagnet, the second electromagnet is opposite the fifth electromagnet, and the third electromagnet is opposite the sixth electromagnet,

said single-phase AC current power supply is connected to each coil of said first through sixth electromagnet and configured to supply a single-phase AC current to each of said coils such that a phase difference between every coil and the immediately adjacent coil is 0° or 180° , and

the coil of the first electromagnet and the coil of the fourth electromagnet are wound in the same first direction (x, x),

the coil of the second electromagnet and the coil of the fifth electromagnet are wound in the same second direction (y, y), the first direction being opposite to the second direction,

the coil of the third electromagnet and the coil of the sixth electromagnet are wound in the same first direction (x, x),

the single-phase AC current supplied from said single-phase AC current power supply to each of the coils of said first through sixth electromagnets develops magnetic forces between every two electromagnets arranged adjacent to each other on the same side that are reversed in direction repeatedly over time to ~~inducing~~ induce only vibrating flows (10) in a direction of longitudinal width of the mold.

23. (currently amended) ~~[[The]]~~ An apparatus of claim 1 for continuous casting of molten metals, the molten metal being continuously cast using a casting mold, said apparatus comprising:

electromagnets each comprising an iron core and a coil wound over said iron core,

said electromagnets being arranged in a facing relation on opposite sides of said mold along a transverse width thereof to lie side by side along a longitudinal width of said mold; and

a single-phase AC current power supply connected to each coil and structurally configured to supply a single-phase AC current to each coil such that every pair of the electromagnets lying side by side next to each other have a phase difference of 0° or 180° , wherein,

said electromagnets arranged in a facing relation on opposite sides of said mold along a transverse width thereof to lie side by side along a longitudinal width of said mold comprise

i) at least a first electromagnet on a first of said sides, a second electromagnet immediately adjacent the first electromagnet, and a third electromagnet immediately adjacent the second electromagnet, and ii) at least a fourth electromagnet on a second of said sides, a fifth electromagnet immediately adjacent the fourth electromagnet, and a sixth electromagnet immediately adjacent the fifth electromagnet,

the first electromagnet is opposite the fourth electromagnet, the second electromagnet is opposite the fifth electromagnet, and the third electromagnet is opposite the sixth electromagnet,

said single-phase AC current power supply is connected to each coil of said first through sixth electromagnet and configured to supply a single-phase AC current to each of said coils such that a phase difference between every coil and the immediately adjacent is coil 0° or 180° , and

the coils of the first through third electromagnets are wound in the same first direction (x, x, x),

the coils of the fourth through sixth electromagnets are wound in the same second direction (y, y, y), the first direction being opposite to the second direction,

the single-phase AC current supplied from said single-phase AC current power supply to each of the coils of said first through sixth electromagnets develops magnetic forces between every two electromagnets arranged opposite to each other on

different sides of the mold that are reversed in direction repeatedly over time to induce only vibrating flows (20) in a direction transverse to a width of the mold.